Absorption limits.—The conditions existing in roots while in equilibrium concentration (equal absorption and leaching of ions) with the surrounding solution have been studied by HARVEY and TRUE[14] in sweet corn, squash, peanut, and soy bean. The value of the equilibrium concentration was found to be specific for each plant. Thus for sweet corn it was $12-15\ N\times 10^{-6}$, while for squash it was $35-40\ N\times 10^{-6}$, and for the peanut $50\ N\times 10^{-6}$. It was independent, however, of the kind of electrolyte used, or of the original concentration or volume used, provided the original concentration was non-toxic, and that the volume contained less salt than the plant requires for full growth, so that minimum limits for absorption would be reached. The electrolyte content of the solution after equilibrium has been reached is determined partly by volatile ions (CO_2) which are quantitatively equal for all plants grown under equal conditions if equilibrium with the atmosphere has been established; but it is mainly determined by the rate at which ion-producing compounds of the cell break down, and the rate of reabsorption of these ions. The behavior of roots at minimum concentrations seems to substantiate STILES' view that there are concentration limits below which the root cannot absorb enough salts, merely because the nutrient solution is too dilute.—C. A. SHULL.

Embryogeny in angiosperms.—SOUÈGES,[15] in continuing his studies of embryogeny in angiosperms, has emphasized his claim that the laws which govern development are the same in monocotyledons and dicotyledons. The investigations cited compare typical representatives of monocotyledons and dicotyledons (*Anthericum* and *Polygonum*). According to this investigator the only difference in the embryogeny of the two groups is that in dicotyledons the laws are applicable at the first division of the egg; while in monocotyledons these are not applicable until the second division, the apical cell of the 2-celled embryo being the equivalent of the egg-cell in dicotyledons. It is claimed that the variable behavior of the basal cell of the proembryo of monocotyledons accounts for the differences that have been observed. This thesis is illustrated in detail in the development of the different regions of the embryo.

It is becoming increasingly evident that embryogeny in angiosperms is not represented by two sharply contrasted methods, and these detailed results of SOUÈGES confirm other work dealing only with the cotyledon situation. —J. M. C.

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[14] HARVEY, R. B., and TRUE, R. H., Root absorption from solutions at minimum concentrations. Amer. Jour. Bot. 5:516–521. 1918.

[15] SOUÈGES, R., Embryogénie des Liliacées. Développement de l'embryon chez l' *Anthericum ramosum*. Compt. Rend. pp. 4. July 1918.

———, Embryogénie des Polygonacees. Développement de l'embryon chez le *Polygonum Persicaria*. Compt. Rend. pp. 3. April 1919.